Operating Instructions

Digital Video Recorder

Models: DTR-2009/250CD, DTR-2016/250CD,
DTR-2009/500CD, DTR-2016/500CD,
DTR-2009/750CD DTR-2016/750CD

eneo®

Safety instructions

EMC class

- ► This digital video recorder (DVR) is a class A device in accordance with EN 55022.
- ► This device may cause interference to other equipment in domestic use. In such cases the persons operating the DVR are required to provide appropriate countermeasures, for which they themselves bear the cost.

Importance of these Operating Instructions

- ► Please read the safety instructions and the other information contained in the Operating Instructions before connecting up and operating the DVR.
- ► The Operating Instructions should be kept in a safe place for later reference.

Ambient conditions

- ► The DVR should be protected against excessive heat, dust, moisture and vibration.
- ► The DVR may only be operated at temperatures between +5°C and +40°C, and up to a maximum air humidity of 90%.
- ► The DVR may only be operated indoors, and must be protected against ingress of water and moisture.

Care of the DVR

- ► Never switch on the DVR when moisture has penetrated it. In such cases, have the DVR checked by a qualified service engineer.
- ► Do not place any heavy objects on the DVR.
- ► Never cover over the DVR's vents.
- ► Never insert metal objects or any other items into the vents. This may permanently damage the DVR.
- ► The housing may only be opened by authorised persons. Repairs may only be carried out by qualified service personnel.
- ► The DVR must be disconnected from the power supply before its housing is opened.

Getting started with the DVR

- ► When laying the connecting cables, make sure no weight is placed on them, that they are not kinked or damaged, and that no moisture can penetrate them..

Cleaning

- ► The housing of the DVR may only be cleaned with a moisture (not wet) cloth.
- ► Use only a mild detergent. Do not use solvent-containing detergents or petrol. This could permanently damage the surface finish.

Spare parts

- ► Use only original spare parts from Videor Technical GmbH..

Table of contents

Overview 7
- Package contents 7
- Basis functions 7
- Features 7
- Requirements for operation 7
- Control options 7

Connections on the rear 8
Front panel controls 9
Key to controls 10
- Function buttons 10
- PTZ camera functions 10
- Playback functions 10

Remote control functions 11
- Playback functions 11

Menu overview 12
Accessing the menus 14
- Accessing the Display menu 14
- Accessing the PTZ menu 14
- Accessing the Setup menu 15
- Accessing the Search menu 15

Getting started 16
- Checklist for DVR operation 16
- Connecting the remote control and DVR 16
- Switching on the DVR 17
- Switching off the DVR 17

Administration 18
- Saving your system setup 18
- Loading your system setup 18
- Deleting recordings 18
- Downloading software updates 19
- Hiding from specific users 19
- Restoring factory defaults 19
- Determining the memory requirement of a recording 20

Searching for recordings 21
- Using calendar search 22
- Using event log search 23
- Using text-in search 24
- Using motion search 25
- Copying recordings 26

Table of contents

Menu descriptions – Setup menu 27
- System – Information 28
- System – Date/Time 29
- System – Storage 30
- System – User 32
- System – Shutdown 33
- System – Log out user1... 33
- Network – Network 33
- Network – Notification 36
- Devices – Camera 37
- Devices – Audio 38
- Devices – Alarm-Out 39
- Devices – Display 40
- Devices – Remote Control 41
- Record – Record 42
- Record – Schedule 43
- Record – Pre-Event 44
- Record – Archive 45
- Event – Alarm-In 46
- Event – Motion Detection 48
- Event – Video Loss 50
- Event – Text-In 52
- Event – System Event 54
- Event – Event Status 56

Specifications DTR-2009 57
Specifications DTR-2016 59
Accessories 61
Supported PTZ cameras 62
Index 63
Notes on disposal 66

Overview

Package contents

- Digital video recorder (DVR)
- Mains power cord
- Operating instructions
- RAS (Remote Administration System) software on CD
- Operating instructions for RAS software on paper and CD
- Mounting kit for rack installation
- Screws for attaching SCSI Connector
- Mounting screws and guide for installation of hard disk drives
- Infrared remote control

Basis functions

- Recording of video images from multiple cameras
- Event-triggered start of recording
- Video playback
- Search for specific video sequences

Features

- MPEG-4 compression / duplex mode
- 9 or 16 loop-through inputs / VGA, S-VHS/FBAS outputs
- Audio and alarm inputs / outputs
- Max. recording speed: 100 field images per sec (PAL)
- Memory capacity 250 GB / 500 GB / 750 GB
- Maximum video resolution 720 x 576 pixels
- SCSI port for archiving / memory expansion
- Various recording criteria possible
- Archiving/image transfer via USB and CD-RW
- ATM/POS text display / 2x to 4x digital zoom
- Telemetry control functions via RS-485 port
- Network port (Ethernet) / IR remote control

Requirements for operation

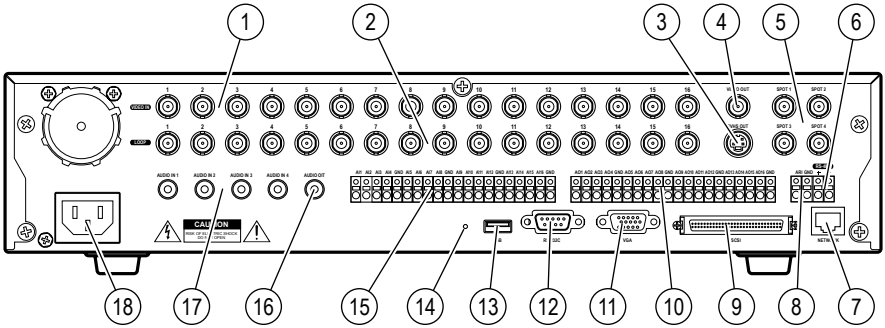
- Digital video recorder DTR connected
- At least 1 camera connected
- At least 1 monitor connected
- Mouse connected, if DVR is to be controlled by mouse

Control options

- Front panel
- Remote control
- Mouse
- RAS program

Connections on the rear

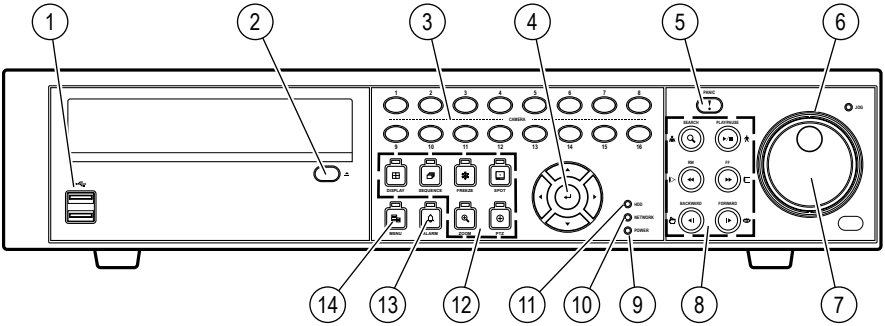
Note: Connections optionally for NTSC or PAL operation.



No.	Designation	Functions/connections	Example devices
1	VIDEO IN 1-16	Max. 16 video channels	Cameras
2	LOOP 1-16	Max. 16 loop-through video channels	Cameras
3	SVHS OUT	S-VHS output	Monitors
4	VIDEO OUT	Video output	Monitors
5	SPOT1 - SPOT4	Max. 4 video outputs	Spot monitors
6	RS-485	External interface	Keyboard, PTZ camera
7	NETWORK	Network	Network cable
8	ARI/GND	Reset alarm with external signal	Switch
9	SCSI	External storage media	Hard disk
10	AO1 - AO16	Alarm outputs for external devices	Siren, flashing light
11	VGA	PC monitor	PC monitor
12	RS-232C	External interface	Modem
13	USB	External interface	Drive, mouse
14	Reset switch	Reset to factory defaults	-
15	AI1 - AI16	Alarm inputs for external devices	Sensors
16	AUDIO OUT	Audio output	Amplifier, speakers
17	AUDIO IN 1 - AUDIO IN 4	Max. 4 Audio inputs	Microphone
18	Power supply	Mains power connection	-

Front panel controls

The following diagram and table shows the controls on the front panel of the DVR:



No.	Designation	Function
1		USB ports
2		Eject built-in CD-RW writer
3	1 to 16	• Select cameras • Enter passwords
4	Menu navigation	Navigation and selection within the menu
5	PANIC	Start/end panic recording
6	Shuttle ring	Infinitely adjust playback speed
7	Jog dial	• Change size of frame in picture-in-picture mode • Change numerical values in Setup menu • Frame-by-frame playback in Play mode
8		Playback functions (primary assignment)
		PTZ camera functions (secondary assignment)
9	POWER	Power-on indicator when DVR is in operation
10	NETWORK	Indicates Ethernet or modem connection
11	HDD	Indicates hard disk operation
12	DISPLAY, SEQUENCE, FREEZE, SPOT, ZOOM, PTZ	Function buttons
13	ALARM	• Reset alarm • View event list
14	MENU	Open/quit menu structure

Key to controls

Function buttons

Element	Function
	• Change display mode • Switch video input by pressing and holding down button
	Sequence On/Off
	Freeze On/Off
	PTZ camera functions On/Off
	Zoom On/Off
	Spot monitor assignments

PTZ camera functions

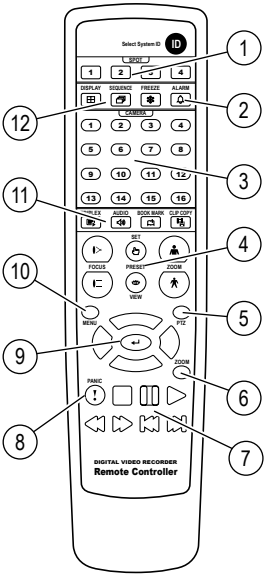
Element	Function
	Zoom in
	Zoom out
	Close-up
	Wide-angle
	Save preset
	Load preset

Playback functions

Element	Function
	• Select Search/Play function • Stop playback
	Frame-by-frame rewind
	Fast rewind
	Start/pause playback
	Fast forward
	Frame-by-frame forward

Remote control functions

The following diagram and table shows the functions on the remote control:



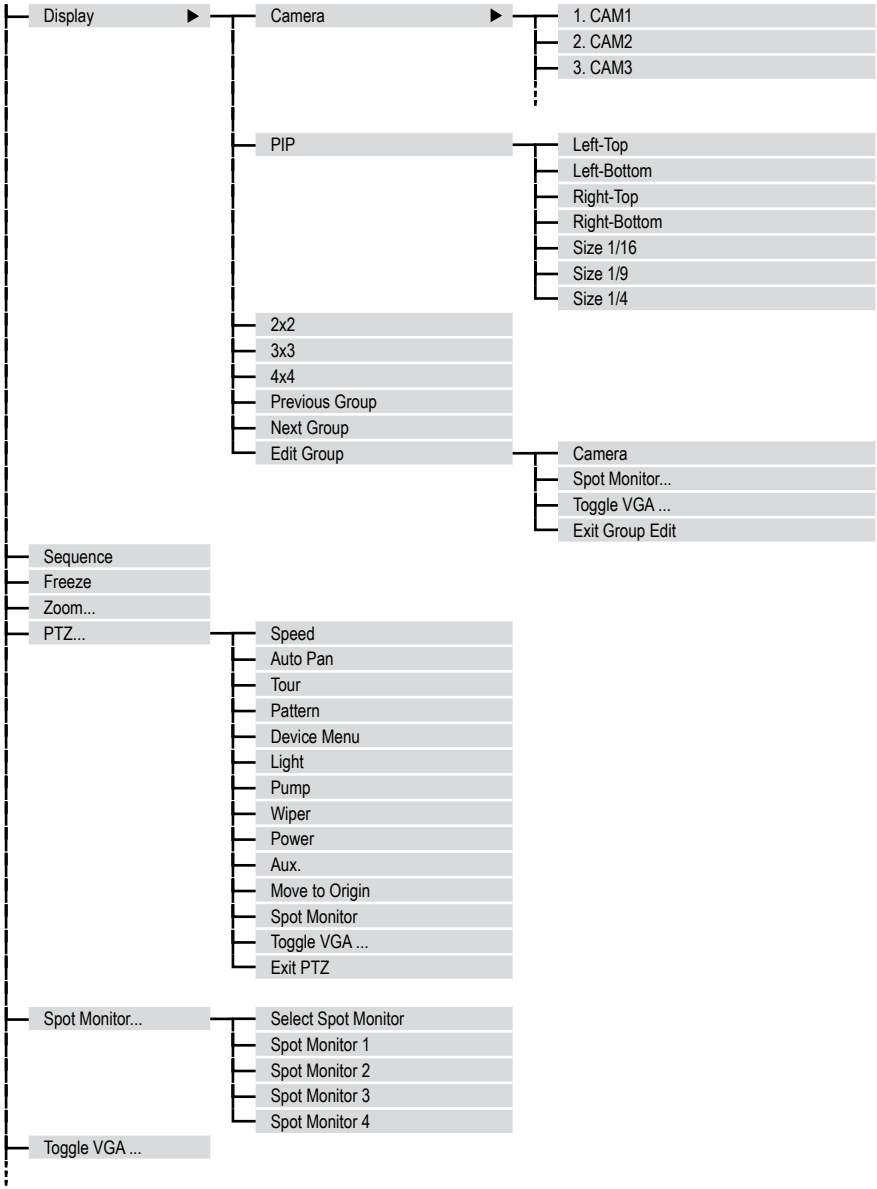
No.	Designation	Function
1	SPOT 1 - 4	Spot monitor assignments
2	ALARM	● Reset alarm ● View event list
3	1 to 16	● Select cameras ● Enter passwords
4		PTZ camera functions
5	PTZ	PTZ camera functions On/Off
6	ZOOM	Zoom On/Off
7		Playback functions
8	PANIC	Start/end panic recording
9	Menu navigation	Navigation and selection within the menu
10	MENU	Open/quit menu structure
11		No function
12	DISPLAY, SEQUENCE, FREEZE	Function buttons

Playback functions

Element	Function
	● Select Search/Play function ● Stop playback
	Pause playback
	Start playback
	Fast rewind
	Fast forward
	Frame-by-frame rewind
	Frame-by-frame forward

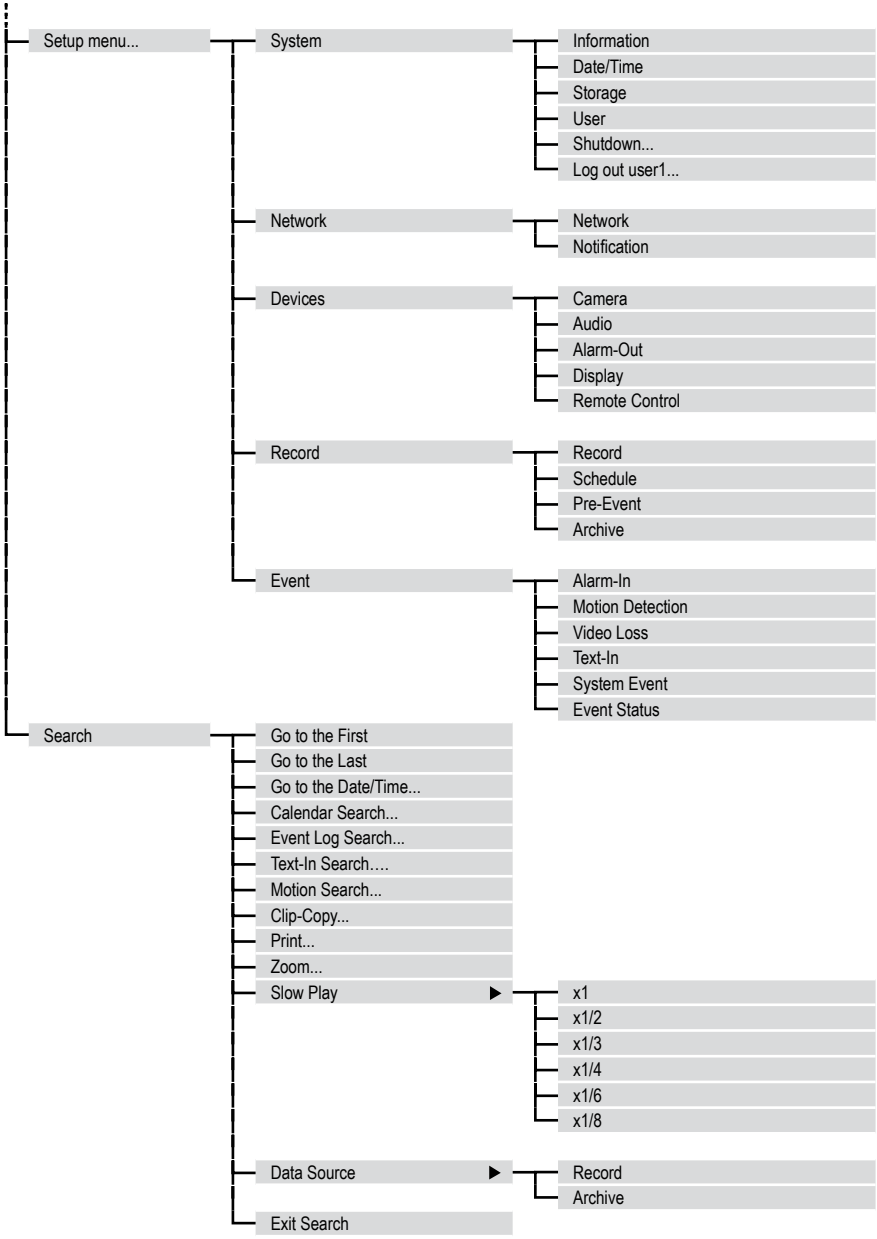
Menu overview

The following illustration shows the structure of the complete menu tree that is accessible using the mouse control:



Menu overview, continued

The following illustration shows the structure of the complete menu tree that is accessible using the mouse control:



Accessing the menus

Accessing the Display menu

Requirement:

- The current camera image is shown in full image or quad image.

Step	Action	Access using	Key sequence/menu path
1	Open Display menu...	Device	
		Remote control	
		Mouse	Display

Access to submenu via Device/Remote Control

Submenu	Camera image	Key sequence
Change Display modes (PIP, 2x2, 3x3, 4x4)	Without frame	....
Previous/Next Group	Without frame	
Edit Group	With frames	>
Change position of image-in-image	Without frame	
Change size of image-in-image	Without frame	Jog dial

Accessing the PTZ menu

Requirement:

- A PTZ camera is connected and configured.
- Current camera image is shown as a full image.

Step	Action	Access using	Key sequence/menu path
1	Open PTZ menu... **Result:** Menu of the configured PTZ camera is shown.	Device	>
		Remote control	PTZ > MENU
		Mouse	PTZ...

Accessing the menus, continued

Accessing the Setup menu

Requirement:

- The current camera image is shown in full image or quad image.

Step	Action	Access using	Key sequence/menu path
1	Open Setup menu... **Result:** Prompt for user name and password.	Device	
		Remote control	MENU
		Mouse	Setup menu...
2	Log in as user. User name: admin Password: (blank) **Note:** Use default access data only for first-time access.		

Accessing the Search menu

Requirement:

- The current camera image is shown in full image or quad image.

Step	Action	Access using	Key sequence/menu path
1	Open Search menu... **Result:** Search for recorded images is activated.	Device	>
		Remote control	> MENU
		Mouse	Search

Getting started

Checklist for DVR operation

Step	Action	Menu path
1	Connect peripheral devices as per planned setup.	
2	Specify menu language..	Setup menu... > System > Information
3	Adjust date and time..	Setup menu... > System > Date/Time
4	Set up user.	Setup menu... > System > User
5	Set up network and desired notification channels (optional).	Setup menu... > Network > ...
6	Register peripherals with DVR.	Setup menu... > Devices > ...
7	Set up event types and associated responses.	Setup menu... > Event > ...
8	Set up recording parameters and schedule.	Setup menu... > Record > ...

Connecting the remote control and DVR

The remote control and DVR can be assigned an ID, because the ID of each DVR in the network must be unique. The DVR will then only respond to the remote control with the matching ID.

- If the system ID in the DVR is 0, it will respond to the remote control regardless of the remote's ID.
- If the system ID in the DVR is not 0, you must set the ID of the remote control identically.

Step	Action	Menu path
1	Set DVR system ID.	Setup menu... > System > Information
2	Match remote control to system ID by pressing ID button on remote control.	
3	Select relevant number on remote control.	

Switching on the DVR

Requirement:

- The start-up preparations are complete.

Step	Action
1	Plug in DVR mains plug.
2	Switch on monitor. **Result:** System starts up automatically and is ready to use.

Switching off the DVR

Requirement:

- You have accessed the Setup menu.

Step	Action	Menu path
1	Shut down system. **Result:** System shuts down automatically.	Setup menu > System > Shutdown ...
2	After shutdown, disconnect the mains plug.	

Administration

Saving your system setup

You can save your DVR's setup data, including its network configuration.

Requirement:

- USB memory stick

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports	
2	Export your setup.	Setup menu... > System > Information > Setup Export...
3	Specify a file name.	
4	Export your setup.	Export

Loading your system setup

You can load your stored DVR system setup with or without its network configuration.

Requirement:

- USB memory stick with stored setup

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports.	
2	Import your setup.	Setup menu... > System > Information > Setup Import...
3	Select the file name and, where appropriate, the network configuration.	
4	Import your setup.	Import

Deleting recordings

You can only delete all your recordings together. It is not possible to delete recordings from a specific time period.

Step	Action	Menu path
1	Delete all recordings.	Setup menu > System > Information > Clear All Data... or Setup menu > System > Storage > Information tab > Using > Clear

Downloading software updates

You can download software updates for your DVR from a USB memory stick.

Requirement:

- USB memory stick with latest software release

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports.	
2	Start update.	Setup menu... > System > Information > Upgrade...
3	Install new release	

Hiding from specific users

You can hide video images and camera data according to the preset user rights.

Step	Action	Menu path
1	Set camera Covert mode.	Setup menu... > Devices > Camera > Settings
2	Cancel 'Covert Camera View' access for specific users (groups).	Setup menu... > System > User

Restoring factory defaults

Before restoring the factory defaults, you should export your current system settings in case you need to re-import them later. (see *Saving your system setup* and *Loading your system setup*)

Step	Action
1	Shut down the system.
2	Disconnect the mains plug.
3	Push a paper clip into the Reset button (on the rear of the DVR) and hold it there.
4	Plug in the mains plug.
5	Wait for all the LEDs to flash 5 times (about 30 seconds).
6	Withdraw the paper clip.

Determining the memory requirement of a recording

The amount of memory recorded video sequences will take up depends on the following factors:

- picture quality
- number of images per second
- duration

The memory requirement is calculated by this formula:

Memory requirement = picture size x duration of recording x images per second

Example calculation of CIF resolution (PAL):

Picture quality	Picture size	Duration of recording	Approx. memory space		
			5 images/s	10 images/s	25 images/s
Basic	2.4 KB	24 hours	1.04 GB	2.07 GB	5.18 GB
Standard	4.8 KB	24 hours	2.07 GB	4.15 GB	10.37 GB
High	9.6 KB	24 hours	4.15 GB	8.29 GB	20.74 GB
Very high	14.4 KB	24 hours	6.22 GB	12.44 GB	31.10 GB

Example calculation of 2CIF resolution (PAL):

Picture quality	Picture size	Duration of recording	Approx. memory space		
			5 images/s	10 images/s	25 images/s
Basic	4.8 KB	24 hours	2.07 GB	4.15 GB	10.37 GB
Standard	9.6 KB	24 hours	4.15 GB	8.29 GB	20.74 GB
High	19.2 KB	24 hours	8.29 GB	16.59 GB	41.47 GB
Very high	28.8 KB	24 hours	12.44 GB	24.88 GB	62.20 GB

Searching for recordings

Find first stored recording

Search ⇨ **Go to the First**

Find last stored recording

Search ⇨ **Go to the Last**

Find recording by date and time

Search ⇨ **Go to the Date/Time...**

Calendar search

For each camera the calendar search indicates:

- the days from which there are recordings
- the time ranges of recordings on those days

Search ⇨ **Calendar Search...**

Event log search

The event log search enables you to search for events based on specific criteria, such as:

- movements recorded by a specific camera
- alarm from a specific alarm input
- System events

Search ⇨ **Event Log Search...**

Text-in search

The text-in search enables you to search for recordings based on specific text inputs.

Search ⇨ **Text-In Search…**

Motion search

The motion search function can detect movements in recordings within defined zones for one camera. 2 types of motion search are possible:

- Motion search: Search for movement in a defined zone.
- Museum search: Search for movement of a defined object.

Search ⇨ **Motion Search...**

Copying recordings

Recordings can be written to a CD or copied to a USB memory stick.

Search ⇨ **Clip-Copy...**

Using calendar search

Performing a calendar search

Step	Action	Menu path
1	Open calendar search. **Result:** Calendar and time line are displayed.	Search > Calendar Search...
2	Select day and time	
3	Confirm input.	Go

Search ⇨ **Calendar Search...**

Term	Symbol	Meaning
		Date display ● Grey: No recording available ● White: Recording available
		Hours display ● White: Recording available
Select a Segment		If the date and time on the DVR have been changed (such as when switching to Summer time) there may be multiple recordings for one time from the same camera. They are stored in separate segments.

Using event log search

Performing an event log search

Step	Action	Menu path
1	Open event log search. **Result:** The result of the last search is displayed.	Search > Event Log Search...
2	Define criteria.	Option...
3	Confirm input. **Result:** List of search results is displayed.	Search
4	Select desired entry from list.	

Search ⇨ **Event Log Search...** ⇨ **Option...**

Term	Symbol	Meaning
From First	☑ [...]	Start date
To Last	☑ [...]	End date
Check Time Overlap	☑	Activates a system prompt if there are multiple recordings for the same time range
Alarm-In	☐ ☑	Alarm inputs in response to which a search for events is to start
Motion	☐ ☑	Cameras on which to search for motion detection
Video Loss	☐ ☑	Cameras on which to search for video loss
Text-In	☐ ☑	Text input devices on which to search for events
Record Channels	☐ ☑	Cameras on which to search for events
	☑ ☑ ☑	Search for system events: Setup menu > Event > System Event > Actions

Using text-in search

Performing a text-in search

Step	Action	Menu path
1	Open text-in search. **Result:** The result of the last search is displayed.	Search > Text-In Search...
2	Define text inputs.	Option...
3	Confirm input. **Result:** List of search results is displayed.	Search
4	Select desired entry from list.	

Search ⇨ **Text-In Search…** ⇨ **Option...**

Term	Symbol	Meaning
From First	☑ [...]	Start date
To Last	☑ [...]	End date
Channels	☐ ☑	Text input devices on which to search for events
	[▾]	Type of text input:
		Any Text-In Product
		Generic Text
		Epson
No.	☑	Numbers of text elements to search for
Keyword	[...]	Text element
Case Sensitive	☑	Makes search case-sensitive

Using motion search

Performing a motion search

Step	Action	Menu path
1	Display desired camera in single frame.	Display > Camera > ...
2	Open motion search.	Search > Motion Search...
3	Enter settings for motion search.	Option...
4	Confirm input. **Result:** List of search results is generated.	Search
5	Select desired entry from list.	

Search ⇨ **Motion Search...** ⇨ **Option...**

Term	Symbol	Meaning	
From First	☑ ...	Start date	
To Last	☑ ...	End date	
Type	▾	Type of search:	
		Motion Search	Search for movement in a defined zone
		Museum Search	Search for movement of a defined object
Zone	▭ ...	Definition of motion-sensitive zones for motion search or museum search: *See "Zone" on page 46.*	
Sensitivity	▾	Sensitivity of motion detection of:	
		1 (Dull)	
		2	
		3	
		4	
		5 (Sensitive)	
Min. Blocks	...	Motion search only (not museum search): Specify in how many motion-sensitive blocks motion must be detected as a minimum to trigger an alarm	

Copying recordings

Copying recordings to CD or USB memory stick

Step	Action	Menu path
1	Find desired recordings. **Note:** Make a note of the data of the recordings you want to copy.	Search > ...
2	Define settings.	Search > Clip-Copy...
3	Start copying. **Result:** The recordings are copied.	Start

Search ⇨ **Clip-Copy...**

Term	Symbol	Meaning
Data Source	☐	Record
From First	☑ ...	Start date
To Last	☑ ...	End date
Channels	☐ ☑	Assignment of cameras from which recordings are to be copied
Password	☐ ...	Use password, if desired
Dest.	▾	Destination medium:
		Internal CD-RW
		USB CD-RW
		1. USB Storage
		2. USB Storage
		3. USB Storage
File name	...	Name of file on destination medium
Verify After Burning	☑	Activates verification after burning
Progress	☐	Copy status

Menu descriptions – Setup menu

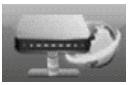
The Setup menu has the following sub-menus:

System menu

On the “System” menu

- the basic settings are made
- users are administered
- the system is shut down

Network menu



On the “Network” menu the network settings are made. Network access provides access to all the functions of the DVR via

- RAS (Remote Administration System), independent of Internet Explorer

The DVR can be configured so that alarms trigger a notification by e-mail or notify an RAS.

Devices menu

On the “Devices” menu the connected peripheral devices are configured. Possible peripherals are:

- Cameras
- Microphones and speakers (through amplifier)
- Sirens and signal lamps
- Monitors
- Remote control for PTZ

Record menu

On the “Record” menu the following settings are made:

- Recording quality
- Timer control
- Duration of pre-event recording
- Schedule and method of archiving

Event menu

On the “Event” menu the following settings are made:

- Assignment of alarm inputs to alarms
- Configuration of motion-sensitive zones individually for each camera
- Definition of text input device and assignment to alarms
- Response to undesirable events

The event status is additionally displayed.

Setup menu

System – Information

On the “Information” menu

- basic information is entered and displayed
- software updates are installed
- recorded data are deleted as required

Setup menu... ⇨ **System** ⇨ **Information**

Term	Symbol	Meaning
Site	...	Location of DVR
System ID	...	Identifier for remote control ● The remote control and DVR must be set to the same ID. ● If the system ID in the DVR is 0, it will respond to the remote control regardless of the remote’s ID.
Language		Menu language
Version		Version of DVR software
Upgrade...		Starts installing latest version of software via USB port
Import...		Import setup
Export...		Export setup
Show System Log...		Show log of all actions and events
Recorded data		
From		Date of oldest recording
To		Date of newest recording
Clear All Data...		Deletes all stored data

Setup menu, continued

System – Date/Time

On the “Date/Time” menu

- time and date settings are made
- dates of public holidays are entered
- time synchronisation is configured.

Setup menu... ⇨ **System** ⇨ **Date/Time** ⇨ **Date/Time**

Term	Symbol	Meaning
Date	...	Date
Format	▾	Date display format
Time	...	Time
Format	▾	Time display format
Time Zone	▾	Local time zone
Use Daylight Saving Time	☑	Activates use of summertime Daylight Saving Time

Setup menu... ⇨ **System** ⇨ **Date/Time** ⇨ **Holiday**

Term	Symbol	Meaning
No.		Number of entered public holiday
Date	...	Date of each desired public holiday

Setup menu... ⇨ **System** ⇨ **Date/Time** ⇨ **Time Sync**

Term	Symbol	Meaning
Automatic Sync	☑	Activates synchronisation with time server
Time Server	...	IP address or domain name of time server
Interval	▾	Synchronisation interval
Last Sync-Time		Time of last synchronisation
Run as Server	☑	Activates use of the DVR as the time server

Setup menu, continued

System – Storage

On the “Storage” menu the status and usage of the available storage media is displayed.

Setup menu... ⇨ **System** ⇨ **Storage** ⇨ **Information**

Term	Symbol	Meaning
Type		Type of storage medium
Capacity		Size of storage medium
Format		Storage medium usage >>
Information		Time range of recorded data >>

⇨ **Format**

Term	Symbol	Meaning	
Use as		Use of storage medium:	
		Record	
		Archive	
		Not using	
Partition	☑	Activating permits:	
		CD/DVD burn	Reserves a data buffer as a separate partition. This is essential for burning CDs, and must be activated for a storage medium with „Record“ usage..
Format		Formatting deletes the recordings from the hard disk	

⇨ **Information**

Term	Symbol	Meaning
Recorded data		
From		Start date of recorded data
To		End date of recorded data
Clear		Delete all recordings

Setup menu, continued

Setup menu... ⇨ System ⇨ Storage ⇨ Status

Term	Symbol	Meaning
Type		Memory type
Disk Bad		Data carrier status
Temperature		Temperature status
S.M.A.R.T.		Result of S.M.A.R.T. check

Setup menu, continued

System – User

On the “User” menu the user groups and individual users are set up.

Setup menu... ⇨ **System** ⇨ **User**

Term	Symbol	Meaning
Group & User Group field		Assignment of group access privileges Table of possible group access privileges >>
Group & User User field		Set password
+ Group...		Add a new group
+ User...		Add a new user Set password
Auto Login		User to be logged in automatically
Auto Logout		Time after which logged-in user is automatically logged out

⇨ **Table of possible group access privileges**

Group access privilege	Meaning
Shutdown	May shut down the DVR
Upgrade	May install a new firmware version
System Time Change	May change the time setting
Data Clear	May delete recording data
Setup	May make changes anywhere on the Setup menu
Color Control	May change the picture settings
PTZ Control	May control PTZ cameras
Alarm-Out Control	May reset alarms
Covert Camera View	May view video images from covert cameras
System Check	May interrogate system status
Record Setup	May make changes to the Record menu
Search	May use Search mode
Clip-Copy	May copy video images

Setup menu, continued

System – Shutdown

Setup menu... ⇨ System ⇨ Shutdown...

System – Log out user1...

Setup menu... ⇨ System ⇨ Log out user1...

Network – Network

On the “Network” menu all settings required to ensure network access are made.

Setup menu... ⇨ Network ⇨ Network ⇨ Network

Term	Symbol	Meaning	
Transfer Speed	...	Transmission bandwidth:	
		(bps)	bits per second
		(ips)	images per second
Quality		Quality of picture transmission via network (PAL):	
		Very High	14.4 KB/picture
		High	9.6 KB/picture
		Standard	4.8 KB/picture
		Basic	2.4 KB/picture

Setup menu, continued

Setup menu... ⇨ Network ⇨ Network ⇨ LAN

Term	Symbol	Meaning	
Type		Type of connection to DVR:	
		Manual	Manual connection required input of: • IP address • Gateway • Subnet Mask
		DHCP	Automatic assignment of IP address of DNS server
		ADSL (with PPPoE)	Requires following input as specified by provider: • ID • Password
		Note: Use of modem must not be activated.	
DNS Server	...	Address of DNS server	
Port Number Setup...		Definition of port numbers needed to access the DVR via the RAS software	

Setup menu... ⇨ Network ⇨ Network ⇨ Modem

Term	Symbol	Meaning
Enable	☑	Enables modem use **Note:** LAN type ADSL must not be enabled.
Baud Rate		Baud rate
Data		Number of data bits
Stop Bit		Number of stop bits
Parity		Parity

Setup menu, continued

Setup menu... ⇨ Network ⇨ Network ⇨ DVRNS

Term	Symbol	Meaning
Use DVR Name Service	☑	Enables the DVR name service
DVRNS Server	...	IP address or domain name of DVRNS server DVRNS = Digital Video Recorder Name Service
Port	...	Port for DVRNS
Use NAT	☑	Enables NAT (Network Address Translation) use
DVR Name	...	Name by which the DVR is to be registered with the DVRNS server
Check		Check DVR name for usability after entering
Help Desk		Information from help desk if DVRNS setting correct

Network – Notification

On the “Notify” menu the method of notification is defined.

Setup menu... ⇨ Network ⇨ Notification ⇨ Mail

Term	Symbol	Meaning
Enable	☑	Enables notification by e-mail
SMTP Server	...	IP address or domain name of SMTP server
Port	...	Port for SMTP server Default is port 25.
Authentication	☐	Login to SMTP server
Sender	...	E-mail address of sender
Recipient	...	E-mail address of recipient

Setup menu... ⇨ Network ⇨ Notification ⇨ Callback

Term	Symbol	Meaning
LAN	☑	Enables notification of an RAS via LAN
No.		Number of IP address
IP Address	...	IP addresses of RAS PCs
Retry	...	Number of notification attempts by the DVR in the event of an error
Modem	☑	Enables notification of an RAS via modem
Remote Server Phone Number	...	Telephone number of the modem on the notified RAS PC
Outside Line Call	...	Outside line code for external calls, if DVR’s modem is connected to a PABX system
Callback Phone Number	...	Telephone number of DVR’s modem The RAS PC contacts the DVR on this number.

Setup menu, continued

Devices – Camera

On the “Camera” menu the cameras are configured.

Setup menu... ⇨ Devices ⇨ Camera ⇨ Settings

Term	Symbol	Meaning	
No.	☑	Activates the cameras	
Title	...	Name of camera	
Use		Visibility of recordings and camera data depending on user access privileges:	
		Normal	All users see all camera data and all recordings
		Covert 1	Users without relevant access see camera title, status symbol, but no recordings
		Covert 2	Users without relevant access see only camera title, but no recordings

Setup menu... ⇨ Devices ⇨ Camera ⇨ PTZ

Term	Symbol	Meaning
No.		Number of camera
Product		PTZ camera type as per specified list
ID	...	Unique ID of PTZ camera
Port		Interface type of PTZ cameras
Setup…		Settings as specified by PTZ camera manufacturer:
		Baud Rate
		Data Bit
		Stop Bit
		Parity

Setup menu, continued

Devices – Audio

On the “Audio” menu the audio outputs are assigned to the cameras.

Setup menu... ⇨ **Devices** ⇨ **Audio**

Term	Symbol	Meaning
No.		Number of audio output
Associated Camera		Assignment of camera
Enable Audio-Out	☑	Enables all audio outputs

Setup menu, continued

Devices – Alarm-Out

On the “Alarm-Out” menu the alarm outputs are configured.

- “Settings” tab: The alarm outputs are configured.
- “Schedule” tab: Time slots are defined in which the alarm outputs respond in specific ways.

Setup menu... ⇨ **Devices** ⇨ **Alarm-Out** ⇨ 🗀 **Settings**

Term	Symbol	Meaning	
No.	☐	Number of alarm output	
Title	...	Name of alarm output	
Type	☐▾	Contact method of alarm output:	
		NO	Normally Open
		NC	Normally Closed
Dwell time	☐▾	Duration of alarm signal	

Setup menu... ⇨ **Devices** ⇨ **Alarm-Out** ⇨ 🗀 **Schedule**

Term	Symbol	Meaning	
No.	☐	Number of schedule entry	
Day	☐▾	Day of the week	
Range	...	Time range at 15-minute intervals	
Mode	☐▾	Response in defined period:	
		On	Continuous alarm
		Event	Alarm in response to event
		Off	No alarm
Channels	☐ ☑	Enable ● alarm outputs ● internal beep by DVR	

Devices – Display

On the “Display” menu the mode of on-screen display is configured.

- “OSD” tab: Specify what additional information is displayed on-screen.
- “Main Monitor” tab: Specify how the camera images are displayed on the main monitor.
- “Spot Monitor” tab: Specify which cameras are displayed on the spot monitors.

Setup menu... ⇨ **Devices** ⇨ **Display** ⇨ **OSD**

Term	Symbol	Displayed symbol	Meaning
Status			
Remote Control	☑		Visible when remote control enabled
Zoom	☑		Visible when Zoom mode enabled
Network	☑		Visible when DVR operating in a network
Freeze & Sequence	☑		• Visible when freeze frame enabled • Visible when Sequence mode enabled
Screen Group	☑	1/4	Displays number of groups, and their ID numbers
Free Space	☑		• Visible when Recycle mode enabled • Remaining hard disk capacity, if Recycle mode not selected
Archive	☑		Visible when archiving in progress
Date	☑	-	Date display
Time	☑	-	Time display
User Name	☑	-	Display of user name
Camera			
No.	☑	-	Display of camera number
Title	☑	-	Display of camera title
Record	☑		Display of Record symbols
PTZ	☑	PTZ	Visible when PTZ camera is displayed
Text-In	☑	-	Display of character string
Transparency		-	Transparency of menu screens
OSD Margin...		-	Distance of displayed symbols from screen margin

Setup menu, continued

Setup menu... ⇨ Devices ⇨ Display ⇨ Main Monitor

Term	Symbol	Meaning	
Mode	▭▾	Modes of sequences in multiple playback:	
		Full Sequence	All cameras are switched through sequentially.
		Cameo Sequence	Only the image at the bottom right is switched through; cameras in „Covert“ mode are not displayed to users without „Covert“ access.
Interval	▭▾	Time interval between picture refresh	
Event Monitoring On	☑	Displays image of relevant camera in full-screen mode when an event occurs	

Setup menu... ⇨ Devices ⇨ Display ⇨ Spot Monitor

Term	Symbol	Meaning
No.	▭	Number of spot monitor output
Channels	▭ ☑	• Cameras • Display time of recordings from cameras on spot monitor

Devices – Remote Control

On the “Remote Control” menu the remote control function is configured.

Setup menu... ⇨ Devices ⇨ Remote Control

Term	Symbol	Meaning
Port	▭▾	Interface type of remote control
Setup…	▭	Setup as specified by manufacturer:
		Baud Rate
		Data Bit
		Stop Bit
		Parity
Remote Control Product	▭▾	Remote control type as per specified list

Setup menu, continued

Record – Record

On the “Record” menu the basic settings for recordings and their quality are made.

Setup menu... ⇨ **Record** ⇨ **Record**

Term	Symbol	Meaning	
Recycle	☑	Enables automatic overwriting of the oldest recordings when the hard disk is full **Note:** If not enabled, recording ends when the hard disk is full.	
Resolution	▭▾	Quality of recorded images	
		Standard	CIF
		High	2CIF
Event Record Dwell	▭▾	Duration of recording when an event occurs	
Auto Deletion	▬	Specify time after which automatically deleted	
Use Panic Recording	☑	Enables the panic recording function	
Panic Recording Duration	▭▾	Duration of panic recording	
		No Limit	End panic recording by pressing PANIC button
		xx min.	Panic recording ends after preset time or by pressing PANIC button
ips	▭▾	Number of recorded images per second in panic recording	
Quality	▭▾	Picture quality of the recorded images in panic recording	

Record – Schedule

On the “Schedule” menu the schedule for recording is defined.

Setup menu... ⇨ **Record** ⇨ **Schedule**

Term	Symbol	Meaning	
Schedule On	☑	Enables schedule entries **Note:** A recording is made only if schedule entries are enabled. Otherwise only panic recording is possible.	
No.	▭	Number of schedule entry	
Day	▭▾	Day of the week	
Range	...	Time range at 15-minute intervals	
Mode	▭▾	Response:	
		No Record	-
		Time	Always record in the defined time slot in the quality set for “Time” mode
		Event	Record only in case of event in the defined time slot in the quality set fpr „Event“ mode
		Time & Event	Always record in the defined time slot in the quality set for “Time” mode, also in case of event in the defined time slot in the quality set for “Event” mode
Channels	▭ ☑	Assignment of cameras to schedule	
Settings	▭ ▭▾	Picture data settings in Time and Event modes:	
		ips	Number of recorded images per second
		Quality	Picture quality of recorded images
Default.	▭ ▭▾	Picture data defaults in Time and Event modes:	
		ips	Number of recorded images per second
		Quality	Picture quality of recorded images

Setup menu, continued

Record – Pre-Event

On the “Pre-Event” menu the settings for recording prior to the event are made.

Setup menu... ⇨ **Record** ⇨ **Pre-Event**

Term	Symbol	Meaning
No.	☑	Activates the cameras
ips	▾	Number of recorded images per second prior to the event
Quality	▾	Picture quality of the recorded images prior to the event
Dwell	...	Recording time prior to the event **Note:** The pre-event recording memory capacity is limited. Consequently, the maximum recording time prior to the event, the number of recorded images and picture quality are inter-dependent.

Setup menu, continued

Record – Archive

On the “Archive” menu the schedules and settings for archiving are entered.

Setup menu... ⇨ **Record** ⇨ **Archive**

Term	Symbol	Meaning	
Archive On	☑	Enables the archiving settings	
Schedule			
Day	☑	Day of week from which to archive recordings	
Range	[...]	Time range	
Archive Data Range			
From	☑ [...]	Start of archiving, from:	
		Last Archived	Time of last archiving
		xx/yy/200x	Defined date and time
To	☑ [...]	End of archiving, up to:	
		Continue	No end
		xx/yy/200x	Defined date and time
Recycle	☑	Enables automatic overwriting of the oldest recordings when the archive medium is full. **Note:** If not enabled, archiving ends when the archive medium is full.	
Summary Archive	☑	Enables the Summary Archive function	

Quality of archived images in summary archive

Recording at xx images/s	Number of images per second	Picture quality of archived images
1 to 15	1	Reduced
16 to 29	1 to 2	Normal
30	2	Normal

Event – Alarm-In

On the “Alarm-In” menu the alarm inputs and responses to events are configured.

Setup menu... ⇨ **Event** ⇨ **Alarm-In** ⇨ **Settings**

Term	Symbol	Meaning
No.	☑	Enables the alarm inputs
Title	...	Name of alarm input
Type	▾	Contact method of alarm input:
		NO Normally Open
		NC Normally Closed
Panic Record	▾	Select alarm input for which the function of panic recording should be activated

Setup menu... ⇨ **Event** ⇨ **Alarm-In** ⇨ **Actions 1**

Term	Symbol	Meaning
No.		Number of alarm input
Record	☐ ☑	Assignment of cameras to record in event of alarm These cameras must be in “Event” or “Time and Event” mode within the time slot: Setup menu > Record > Schedule
Alarm-Out	☐ ☑	Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify	☐ ☑	Assign and enable notifications:
		Mail
		Modem
		LAN 1 to LAN 5
		Alert Window
		The selected function must be enabled: Setup menu > Network > Notification

Setup menu, continued

Setup menu... ⇨ Event ⇨ Alarm-In ⇨ Actions 2

Term	Symbol	Meaning
No.		Number of alarm input
PTZ		Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor		Select spot monitor on which camera image is displayed in event of alarm

Event – Motion Detection

On the “Motion Detection” menu the motion-sensitive zones are defined and responses to events configured.

Setup menu... ⇨ **Event** ⇨ **Motion Detection** ⇨ **Settings**

Term	Symbol	Meaning	
No.	☑	Enables motion detection for the camera	
Sensitivity		Sensitivity of motion detection:	
		Daytime	
		Nighttime	
Zone		Select the motion-sensitive blocks within the time slot Left mouse button functions: ● Click to select/deselect ● Click - hold down - drag to define a zone for selection/deletion/back Right mouse button functions or menu in time slot to select blocks:	
		Select	Select complete row of blocks
		Clear	Clear selection of a row
		Reverse	Reverse selection of a row
		Select All	Select all blocks
		Clear All	Clear selection of all blocks
		Reverse All	Reverse selection of all blocks
Min. Blocks		Specify in how many motion-sensitive blocks motion must be detected as a minimum to trigger an alarm:	
		Daytime	
		Nighttime	
Zone View	☑	Mark the motion-sensitive zones (red in event of motion)	
Motion Ignoring Interval		Time interval between 2 events logged as separate events:	
		Never	Each motion detection is logged as a separate event.
Daytime Setup		Definition of “Daytime” time range	

Setup menu, continued

Setup menu... ⇨ Event ⇨ Motion Detection ⇨ Actions 1

Term	Symbol	Meaning
No.		Number of alarm input
Record		Assignment of cameras to record in event of alarm These cameras must be in “Event” or “Time and Event” mode within the time slot: Setup menu > Record > Schedule
Alarm-Out		Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify		Assign and enable notifications: Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Setup menu... ⇨ Event ⇨ Motion Detection ⇨ Actions 2

Term	Symbol	Meaning
No.		Number of alarm input
PTZ		Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor		Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – Video Loss

On the “Video Loss” menu checking for covert cameras and the responses to events are configured.

Setup menu... ⇨ **Event** ⇨ **Video Loss** ⇨ **Settings**

Term	Symbol	Meaning	
Check Obscuration		Sensitivity of check as to whether camera is covert:	
		Never	not checked
		255	very sensitive

Setup menu... ⇨ **Event** ⇨ **Video Loss** ⇨ **Actions 1**

Term	Symbol	Meaning
No.		Number of covert camera
Record		Assignment of cameras to record in event of alarm These cameras must be in “Event” or “Time and Event” mode within the time slot: Setup menu > Record > Schedule
Alarm-Out		Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify		Assign and enable notifications Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Setup menu, continued

Setup menu... ⇨ Event ⇨ Video Loss ⇨ Actions 2

Term	Symbol	Meaning
No.		Number of covert camera
PTZ		Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor		Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – Text-In

On the “Text-In” menu the text input device is defined and the responses to text input are configured.

Setup menu... ⇨ Event ⇨ Text-In ⇨ Settings

Term	Symbol	Meaning
No.		Number of text input device
Setup		Configuration of text input >>
Title	...	Name of text input

⇨ Setup

Term	Symbol	Meaning
Port		Interface
Setup…		Setting as specified by manufacturer of text input device (ATM, cash-till etc.):
		Baud Rate
		Data Bit
		Stop Bit
		Parity
Text-In Product		Type of text input:
		Generic Text
		Epson
Transaction Start	...	Character string with which text input must start for the DVR to respond
Any Character	☑	DVR responds to any character
Transaction End	...	Character string with which text input must end for the DVR to respond
0 more line(s)		Enables recording of n more lines
Line Delimiter	...	Line delimiter as specified by the text input device manufacturer: ^J for LF or ^M for CR
Ignore String	...	Character string in the text input which the DVR is to ignore All transmittable character strings are specified by the text input device manufacturer.
Case Sensitive	☑	Case sensitivity according to text input device manufacturer’s specification

Setup menu, continued

Setup menu... ⇨ Event ⇨ Text-In ⇨ Actions 1

Term	Symbol	Meaning
No.		Number of alarm input
Record		Assignment of cameras to record in event of alarm These cameras must be in “Event” or “Time and Event” mode within the time slot: Setup menu > Record > Schedule
Alarm-Out		Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify		Assign and enable notifications: Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Setup menu... ⇨ Event ⇨ Text-In ⇨ Actions 2

Term	Symbol	Meaning
No.		Number of alarm input
PTZ		Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor		Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – System Event

On the “System Event” menu the self-diagnostics and corresponding messages are configured.

Setup menu... ⇨ **Event** ⇨ **System Event** ⇨ **Health Check**

Term	Symbol	Meaning
System		System self-diagnostics interval
Check Recording		Setup... . Configuration of schedule >>
Check Alarm-In		Interval and status for checking alarm inputs

⇨ **Setup**

Term	Symbol	Meaning
Schedule On	☑	Enables schedule entries
No.		Number of schedule entry
Day		Day of the week
Range	...	Time range at 15-minute intervals
Interval		Checking interval

Setup menu... ⇨ **Event** ⇨ **System Event** ⇨ **Storage**

Term	Symbol	Meaning
Disk Bad Notify		Percentage of bad sectors on hard disk as from which an alarm is triggered
Disk Almost Full Notify		Percentage hard disk space available as from which “Disk Almost Full” alarm is triggered
Setup…		Configuration of data media S.M.A.R.T. check Opens a window in which the frequency rate and time and a temperature limit (in Celsius or Fahrenheit) for the S.M.A.R.T. check can be specified. If the temperature limit is exceeded an alarm is triggered. For details of your hard disk’s temperature limit refer to the manufacturer’s manual.

Setup menu, continued

Setup menu... ⇨ Event ⇨ System Event ⇨ Actions

Term	Symbol	Meaning	
Event	☐	Events (based on checks):	
		System	System check failed
		Panic Record	Panic recording in progress
		Check Recording	Recording check failed
		Check Alarm-In	Check of alarm inputs failed
		Disk Almost Full	Preset limit value for hard disk capacity reached
		Disk Full	Hard disk full
		Disk Bad	Preset limit value for number of bad sectors reached
		Disk Temperature	Preset temperature limit reached
		Disk S.M.A.R.T.	S.M.A.R.T. check failed
Alarm-Out	☐ ☑	Assign and enable ● alarm outputs ● internal beep by DVR **Note:** Not possible for system event and panic recording	
Notify	☐ ☑	Assign and enable notifications:	
		Mail	
		Modem	(not in case of system event)
		LAN 1 to LAN 5	(not in case of system event)
		Alert Window	(not in case of system event)
		The selected function must be enabled: Setup menu > Network > Notification	

Event – Event Status

The “Event Status” menu indicates the status of all possible events:

- Grey text: Event detection not enabled
- White text: Event detection enabled
- Flashing border: Message – acute event for 5 sec
- Yellow field: Pending event

Setup menu... ⇨ **Event** ⇨ **Event Status** ⇨ **Event Status**

Term	Event
Alarm-In	At alarm input 1 to 16
Check Alarm-In	Error detected at one of alarm inputs 1 to 16
Motion	Motion detected on camera 1 to 16
Video Loss	Video loss on camera 1 to 16
Text-In	Text input on text input device 1 to 16
Panic Record	Panic recording
Check Recording	On checking the recording
Disk Almost Full	On checking the data medium (only if DVR is not operating in Overwrite mode)
Disk Full	On checking the data medium (only if DVR is not operating in Overwrite mode)

Setup menu... ⇨ **Event** ⇨ **Event Status** ⇨ **Storage**

Term	Meaning
Type	Memory type
Disk Bad	Data carrier status
Temperature	Data carrier status
S.M.A.R.T.	Result of S.M.A.R.T. check

Specifications DTR-2009

Model	DTR-2009/250CD	DTR-2009/500CD	DTR-2009/750CD
EDP no.	71943	71944	71945
Video standard	PAL/NTSC (auto detection)		
Remark	Recommended LCD monitors: see Accessories		
Event logs	Unlimited number of entries for alarm/event/text messages, loss of signal		
Security against unauthorised use	Key locking, 64 user groups with programmable access (up to 256 users)		
Transmission rate	100 images per sec (PAL)		
Alarm triggering	E-mail, pager, remote SW (RAS)		
Alarm activation	Automatic multi-screen display of alarm images programmable		
Remote control	Wireless IR remote control (included)		
Text display interface	ATM/POS, 10 channels max.		
Monitor display	Real-time playback: 25 field images per sec (PAL), 30 field images per sec (NTSC) per camera		
Covert camera mode	Programmable		
Time synchronisation	Network time protocol, network time server		
System change log	Up to 5000 entries for login/logout, configuration changes, remote access, change of signal connection, disk read/write errors		
Zoom function	2x~4x		
Playback	Frame image, 4-/9-channel split, PIP		
Post-alarm recording	Up to 15 minutes		
VGA	VGA playback recommended only on monitors with Multisync function		
Control interface	RS-485 port for PTZ control (verified protocols: eneo-Fastrax, Pelco P/D) or keyboard connection for remote control		
Activity detection	Programmable 16 x 16 (256) grid, 5 sensitivity settings		
Simplex/Duplex/Triplex/Pentaplex mode	Duplex		
Video inputs	9x 1 Vp-p, (F)BAS, 75 Ohm, BNC, loop-through		
Monitor outputs	4x spot outputs 1 Vp-p, (F)BAS, 75 Ohm, BNC		
Video output	1x 1 Vp-p, (F)BAS, 75 Ohm, BNC; 1x S-VHS, S= 1 Vp-p, C= 0.3 Vp-p, 75 Ohm		
Audio input	4x amplifier input, cinch		
Audio output	1x amplifier output, cinch		
Resolution	720 x 576 pixels (display)		
Compression method	MPEG-4, higher compression rates with same picture quality enable maximum recording times		
Recording speed	100 field images per sec at CIF resolution (336 x 272 pixels/PAL), 50 field images per sec at 2CIF resolution (672 x 272 pixels/PAL)		

Specifications DTR-2009, continued

Model	DTR-2009/250CD	DTR-2009/500CD	DTR-2009/750CD
Picture size	Basic: 2/2.4 KB; Standard: 4/4.8 KB; High: 8/9.6 KB; Very high: 12/14.4 KB (NTSC/PAL). 2 times larger in High Resolution mode		
Hard disk capacity	250 GB ATA hard disk, expandable to as many as 3 internal hard disks	500 GB ATA hard disk, expandable to as many as 3 internal hard disks	750 GB ATA hard disks
Playback speed	100 field images per sec at CIF resolution (336 x 272 pixels/PAL) and Duplex		
Export of picture data	via USB 2.0, SCSI port, CD writer. Network data export: Clip Player, AVI, JPG, BMP		
Alarm inputs	9x TTL, programmable as NC/NO (terminal strip)		
Alarm outputs	9x TTL, open collector (terminal strip)		
Alarm reset	1x TTL (terminal strip)		
Alarm messages	System error, hard disk error		
Pre-alarm recording	Up to 30 minutes		
Recording medium	ATA-2 (EIDE) hard disks, built-in CD-RW writer		
Archiving	With EIDE, SCSI and USB hard disks. Real-time mirroring		
Menu languages	German, English, Italian, French, Spanish, Polish, Russian, Czech, Hungarian		
Ethernet port	10Base-T, 100Base-TX, RJ-45		
Remote software	For remote administration and image search function (RAS plus included)		
Ports	3x USB, 1x RS-485, 1x RS-232 (remote control/configuration or modem), 1x SCSI for memory expansion		
Power Supply	100 VAC~230VAC, 50/60Hz		
Power consumption	approx. 150 W		
Temperature range	5°C to 40°C		
Housing	Metal with plastic front panel		
Colour	Pantone 427C		
Dimensions (H x W x D)	88 x 430 x 405 mm		
Weight	approx. 10.2 kg		

Specifications DTR-2016

Model	DTR-2016/250CD	DTR-2016/500CD	DTR-2016/750CD
EDP No.	71946	71947	71948
Video standard	PAL/NTSC (auto detection)		
Remark	Recommended LCD monitors: see Accessories		
Event logs	Unlimited number of entries for alarm/event/text messages, loss of signal		
Security against unauthorised use	Key locking, 64 user groups with programmable access (up to 256 users)		
Transmission rate	100 images per sec (PAL)		
Alarm triggering	E-mail, pager, remote SW (RAS)		
Alarm activation	Automatic multi-screen display of alarm images programmable		
Remote control	Wireless IR remote control (included)		
Text display interface	ATM/POS, 10 channels max.		
Monitor display	Real-time playback: 25 field images per sec (PAL), 30 field images per sec (NTSC) per camera		
Covert camera mode	Programmable		
Time synchronisation	Network time protocol, network time server		
System change log	Up to 5000 entries for login/logout, configuration changes, remote access, change of signal connection, disk read/write errors		
Zoom function	2x~4x		
Playback	Frame image, 4-/9-/16-channel split, PIP		
Post-alarm recording	Up to 15 minutes		
VGA	VGA playback recommended only on monitors with Multisync function		
Control interface	RS-485 port for PTZ control (verified protocols: eneo-Fastrax, Pelco P/D) or keyboard connection for remote control		
Activity detection	Programmable 16 x 16 (256) grid, 5 sensitivity settings		
Simplex/Duplex/Triplex/Pentaplex mode	Duplex		
Video inputs	16x 1 Vp-p, (F)BAS, 75 Ohm, BNC, loop-through		
Monitor outputs	4x spot outputs 1 Vp-p, (F)BAS, 75 Ohm, BNC		
Video output	1x 1 Vp-p, (F)BAS, 75 Ohm, BNC; 1x S-VHS, S= 1 Vp-p, C= 0.3 Vp-p, 75 Ohm		
Audio input	4x amplifier input, cinch		
Audio output	1x amplifier output, cinch		
Resolution	720 x 576 pixels (display)		
Compression method	MPEG-4, higher compression rates with same picture quality enable maximum recording times		
Recording speed	100 field image per sec at CIF resolution (336 x 272 pixels/PAL), 50 field image per sec at 2CIF resolution (672 x 272 pixels/PAL)		

Specifications DTR-2016, continued

Model	DTR-2016/250CD	DTR-2016/500CD	DTR-2016/750CD
Picture size	Basic: 2/2.4 KB; Standard: 4/4.8 KB; High: 8/9.6 KB; Very high: 12/14.4 KB (NTSC/PAL). 2 times larger in High Resolution mode		
Hard disk capacity	250 GB ATA hard disk, expandable to as many as 3 internal hard disks	500 GB ATA hard disk, expandable to as many as 3 internal hard disks	750 GB ATA hard disks
Playback speed	100 field image per sec at CIF resolution (336 x 272 pixels/PAL) and Duplex		
Export of picture data	via USB 2.0, SCSI port, CD writer. Network data export: Clip Player, AVI, JPG, BMP		
Alarm inputs	16x TTL, programmable as NC/NO (terminal strip)		
Alarm outputs	16x TTL, open collector (terminal strip)		
Alarm reset	2~4 TTL (terminal strip)		
Alarm messages	System error, hard disk error		
Pre-alarm recording	Up to 30 minutes		
Recording medium	ATA-2 (EIDE) hard disks, built-in CD-RW writer		
Archiving	With EIDE, SCSI and USB hard disks. Real-time mirroring		
Menu languages	German, English, Italian, French, Spanish, Polish, Russian, Czech, Hungarian		
Ethernet port	10Base-T, 100Base-TX, RJ-45		
Remote software	For remote administration and image search function (RAS plus included)		
Ports	3x USB, 1x RS-485, 1x RS-232 (remote control/configuration or modem), 1x SCSI for memory expansion		
Power Supply	100 VAC~230VAC, 50/60Hz		
Power consumption	approx. 150 W		
Temperature range	5°C to 40°C		
Housing	Metal with plastic front panel		
Colour	Pantone 427C		
Dimensions (H x W x D)	88 x 430 x 405 mm		
Weight	approx. 10.2 kg		

Accessories

EDP No.	Short description
71857	250GB hard disk for DLR/DXR/DTR and DCR
71919	500GB hard disk for DLR/DXR/DTR and DCR
74088	System keyboard with 3-axis joystick
74092	System keyboard with joystick, 5” monitor
71902	USB mouse for DVR series DXR, DLR3
90392	15” LCD industrial colour monitor, 1024x768
90393	17” LCD industrial colour monitor, 1280x1024
90430	19” LCD industrial colour monitor, 1280x1024
90443	17” LCD colour monitor, 1280x1024 pixels
90467	32” prof. 16:9 TFT colour monitor, 4x FBAS
90476	23” prof. 16:9 LCD colour monitor, 4x FBAS

Supported PTZ cameras

Manufacturer	Designation
Costar	CDC 2500
Dyna Color	CDC2400
Chilsung	CRD-J6416
Fine	CRR-1660s
Pelco	D-protocol
Dennard	Dennard2060
Tokina	DMP-1223
Dongyang Unitech	DRX-500
Dongyang	DY-255RXC
Sensormatic	Delta Dome II/Ultra IV
Eneo	Fastrax
Philips	G3 Basic AutoDome
LG Honeywell)	GRU604A
JVC	TK-S576
Sensormatic	Ultra VI
Canon	VC-C4
Canon	VC-C50i
Inter-M	VRX-2201
Vicon	Vicon
Hitron	22x AF Zoom
360Vision	VisionDome
Panasonic	WJ-SX550A
Panasonic	WV-CS850/854
CBC	ZC-SD622J
Samsung	Zoom Camera
Honeywell	HDC-655
LG Honeywell	HSD-25X
Honeywell	HSDN-251
Idis	IRX-100
Ultrak	KD6
Ultrak	KD6 Z-series
Kalatel	KTD-312
LG	LPT-A100L
	Novus-C
Samsung	MRX-1000

Manufacturer	Designation
Ademco Video	Orbiter Microsphere
SysMania	ORX_1000
Linlin	PIH-717
ELMO	PTC-200C/CVAS
ELMO	PTC-250C
Pacom	Pacom 2036
Dongyang	Power Controller
Sungjin	Receiver/MPU
Costar	SIC722V
Samsung Techwin	SPD 1600
Samsung	Samsung Dome
Pelco	Spectra Dome
Samsung Techwin	SRX-100B
Hitron	Speed Dome

Index

A

Accessories 61
Alarm
  Configuring inputs 46
  Configuring outputs 39
  Connecting inputs 8
  Connecting outputs 8
  Motion detection 49
  Resetting 9
  Setting schedule for outputs 39
  Setting signal duration 39
Ambient conditions 3, 58
Archiving
  Configuring 45
  Memory requirement 20, 45
  Setting schedule 45
Assigning cameras
  Alarm-In 46
  Motion detection 48, 49
  Text-In 53
  Video loss 50
Assigning PTZ cameras
  Alarm-In 47
  Motion detection 48, 49
  Text-In 53
  Video loss 51

B

Basic functions 7

C

Calendar search 22
Cameo 41
Cleaning 3
Clip-Copy 26
Configuring a pre-event 44
Configuring audio outputs 38
Configuring cameras 37
Configuring event responses 46
Configuring motion detection 48
Configuring notification 36
Configuring panic recording 42
Configuring PTZ cameras 37
Configuring remote control 41
Configuring text input as event 52
Configuring video loss as event 50
Connecting cameras 8
Connections 8
Control options 7
Control protocols 62
Controls
  Front panel controls 9
  Remote control 11
Copying recordings 26
Covert camera setup 19, 37
Covert mode 19, 37

D

Date setting 29
Defining motion-sensitive zones 48
Display
  Configuring 40
  Hiding 19, 37
Displaying event status 56
Display menu
  Access 14
Disposal 66
DVRNS
  Network configuratio 35
Dwell time 39

E

E-mail notification 36
EMC class 3
Enabling notification
  Alarm-In 46
  Motion detection 49
  System event 55
  Text-In 53
  Video loss 50
Event
  Configuring a pre-event 44
  Configuring responses 46
  Defining motion-sensitive zones 48
  Displaying status 56
  Setting recording time 42
  System events 54
  Text input 52
  Video loss 50
Event log 23

F

Front panel controls 9
  Controls 9, 10

Index, continued

G

Getting started
  Video recorder 3, 16

H

Health check 54

I

IP address 34, 35

L

LAN
  Network configuration 34

M

Memory requirement
  Archiving 20, 45
  Recordings 20
Memory type 30
Menu descriptions
  Search menu 21
  Setup menu 27
Menu structure 12
Modem
  Network configuration 34
Monitor
  Configuring display 40
  Configuring display sequence 41
  Connecting 8
Motion search 25

N

Network configuration 33
Network settings
  DVRNS 35
  LAN 34
  Modem 34

P

Package contents 7
PANIC 9, 42
PTZ-menu
  Access 14
PTZ cameras
  Connecting 8
  Supported cameras 62

R

Recordings
  Copying 26
  Deleting 18
  Memory requirement 20
  Searching 21
  Setting schedule 43
Recycling the device 66
Remote control
  Controls 11
  Setting system ID 16, 28
Reset 8, 19
Restoring factory defaults 19

S

Safety instructions 3
Schedule
  Setting for alarm 39
  Setting for archiving 45
  Setting for recording 43
Search
  Calendar search 22
  Event log 23
  Motion search 25
  Text-In 24
Search-menu
  Access 15
Setting a password 32
Setting automatic overwrite 42
Setting group access privileges 32
Setting menu language 28
Setting recording quality 42
Setting recording time when events occur 42
Setting system ID for remote control 28
Setting up user groups 32
Setting up users 32
Setup menu
  Access 15
  Menu descriptions 27
Shutdown 17
Software updates 19
Software version 28
Specifications 57
Specifying public holidays
  29
Spot monitor
  Assigning camera 41
  Connecting 8

Index, continued

Storage media
  Displaying status 30
  Displaying usage 30
  Setting automatic overwrite 42
Switching off 17
Switching on 17
System
  Exporting configuration 28
  Importing configuration 28
  Log out USER 33
  Shutdown 33
System events
  Configuring 54
  Health check 54

T

Text-in search 24
Time
  Setting 29
  Synchronising 29

Notes on disposal

Correct disposal of this DVR

WEEE (Waste Electrical & Electronic Equipment)

Applicable in the member states of the European Union and other European countries with a separate collection system

The marking on the DVR and on the documentation stipulates that it must not be thrown away in normal domestic waste at the end of its useful life.

General rules

- ► Avoid uncontrolled waste disposal: Please dispose of this DVR separately from other waste, so as to avoid posing a hazard to the environment and to human health.
- ► Recycle the DVR in order to aid the sustainable reuse of material resources.

Private users

- ► Contact the retailer from whom you purchased the DVR or your competent local authority to find out how you can recycle the DVR in an environmentally friendly way.

Commercial users

- ► This DVR must not be thrown away with trade waste. To clarify the conditions of disposal, check your purchase contract or contact your supplier.

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VIDEOR TECHNICAL E. Hartig GmbH
Carl-Zeiss-Str. 8 · 63322 Rödermark, Germany
Tel. +49 (0) 6074 / 888-0 · Fax +49 (0) 6074 / 888-100
www.videortechnical.com

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